

B. F. Jonas of Louisiana

The wisdom of Congress should be invoked to devise some plan by which that great river shall cease to be a terror to those who dwell upon its banks, and by which its shipping may safely carry the industrial products of twenty-five millions of people.—*James A. Garfield.*

SPEECH
OF
HON. B. F. JONAS,
OF LOUISIANA,

In the Senate of the United States, April 19, 1882.

The Senate, as in Committee of the Whole, having under consideration the bill (S. No. 1572) for the improvement of the navigation of the Mississippi and Missouri Rivers—

Mr. JONAS said:

Mr. PRESIDENT: While as a member of the Committee on the Improvement of the Mississippi River and its tributaries, I gave my consent that the bill now before the Senate should be reported, I yet reserved my right to support the amendment to be offered by the honorable Senator from Arkansas, [Mr. GARLAND,] and to offer myself another amendment partly in the same line, that of declaring it to be the policy and duty of this Government, both to maintain and improve the navigation of the Mississippi River, and at the same time to guard against and prevent the destructive and periodical overflow of its banks.

Both the bill and amendments provide that the money to be appropriated shall be expended "under the direction of the Mississippi River commission," and "in accordance with plans recommended by said commission," and I propose to show not only that these plans include, and recommend to a large extent, measures for the protection of the alluvial lands in the Mississippi Valley from overflow, but that the river commission were expressly charged with the duty of inquiring into and maturing such plans and submitting them to Congress for action.

The fourth section of the act of Congress, approved June 28, 1879, by which the Mississippi River commission was created, provides that—

It shall be the duty of said commission to take into consideration and mature such plan or plans and estimates as will correct, permanently locate, and deepen the channel and protect the banks of the Mississippi River, improve and give safety and ease to the navigation thereof, prevent destructive floods, promote and facilitate commerce, trade, and the postal service; and when so prepared and matured, to submit to the Secretary of War a full and detailed report of their proceedings and actions, and of such plans, with estimates of the cost thereof, for the purposes aforesaid, to be by him transmitted to Congress: *Provided*, That the commission shall report in full upon the practicability, feasibility, and probable cost of the various plans known as the jetty system, the levee system, and the outlet system, as well as upon such others as they deem necessary.

And section 1 of the same act provides that—

The said commission may, prior to the completion of all the surveys and examinations contemplated by this act, prepare and submit to the Secretary of War plans, specifications, and estimates of costs for such immediate works as, in the judgment of said commission, may constitute a part of the general system of works herein contemplated, to be by him transmitted to Congress.

Thus Congress has expressly appointed a commission charged with the duty not only of maturing plans and furnishing estimates of the cost of works for deepening the channel of the Mississippi River, but also for protecting its banks in order to prevent destructive floods. Yet, when plans have in great part been matured and submitted to Congress, which plans include recommendations for levees and an indorsement of the levee system, we find a disposition to treat this as a new and original question, and as such to deny the right of Congress to make an appropriation for the purpose.

In the bill reported by the committee the following proviso has been inserted:

Provided, That no part of the sum herein appropriated shall be used in the construction or repair of levees for the purpose of preventing injury to lands by overflow, or for any other purpose whatever, except as a means of deepening the channels or improving the navigation of said rivers.

This proviso embodies in a modified form the prejudice and hostility which has long existed, both in and out of Congress, to any measure for the improvement and development of this magnificent natural water-way which, while accomplishing that object, shall afford protection to the alluvial lands through which it flows to meet the sea.

This objection is urged even now, in the face of the great misfortune which has befallen the lowlands of the Mississippi Valley, and which has reduced one of the most prosperous agricultural districts of the earth to a comparative waste, and thrown many thousands of contented and well-to-do laborers upon the generous charity of the Government for bread with which to maintain life.

Many Senators and members of Congress are willing to vote liberal appropriations for the purpose of preserving a proper depth of water in the channel of the river during the low-water season who cannot see their way to the expenditure of a dollar for the purpose of restraining the water within the banks of the river during the season of high water. Hence this proviso.

But, Mr. President, as I said before, this is not a new question. It was settled in the passage of the bill creating the Mississippi River commission.

That commission was charged by its organic act with the duty of preparing plans for the protection of the banks of the river and for preventing "destructive floods." They have made their surveys, they have determined upon plans both for deepening the channel and protecting the banks of the river, and for preventing destructive overflows. They have performed in part the duty assigned them, and have reported their plans and estimates to Congress as directed, and now when we come to make an appropriation to carry out those plans we are about to say that not a dollar of that appropriation is to be used for the purpose of preventing injury to lands by overflow, at least by the construction and repair of levees, which, in the opinion of the commission as well as of nearly all engineers and practical men, is the only mode of preventing destructive overflows.

I do not think, Mr. President, that we should take such a step backward; certainly the country does not expect it of us; certainly

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not when the whole valley of the Mississippi is deluged with its waters, and the riparian proprietors, as well as the States affected, are powerless to stay its ravages.

The Mississippi River, Mr. President, is a great highway belonging to the nation, and extending from its northern frontier to the Gulf of Mexico. Its waters wash the shores of ten States, and it receives the water-shed of nineteen States and all of our Territories east of the Rocky Mountains. It is too great for individual control, and its waters pass from the jurisdiction of any one State. No corporation can be formed grand enough to control it even if the policy of our Government and the interest of the people would permit that it should be submitted to such control. No State has power to bind it or place limit on its flow of waters, or to make treaties with her sister States in order to secure united action for that purpose. The great States of the Northwest, along which it flows, safely intrenched between hills and highlands, demand that it should bear their rich products of wheat and corn and pork and cattle to the markets of the South and of Europe, and ask the Government to improve and maintain its channel so that the cost of such transportation may be reduced and its efficiency increased.

The people of the Southwestern States, along whose alluvial banks the mighty river wends its way to the sea, join in this prayer, for they are purchasers and consumers of the breadstuffs and provisions produced by their brethren, for which they pay with the price of their great staple which clothes half the world and forms the great medium of exchange between this country and Europe.

Shall one interest be protected and another destroyed? Shall the channel be deepened to the sea so that the produce of the North and West may be safely and cheaply conveyed to market, and shall the waters be permitted to overflow and desolate the magnificent country between Cairo and the Gulf? Shall the great river be made a benefaction and a blessing to one portion of our people and be permitted to carry ruin and desolation to another? And is it to the interest of the great grain and food producing North and West that their best home market should be impoverished and destroyed?

President Garfield said in his letter accepting the nomination for the Presidency:

The Mississippi River, with its great tributaries, is of such vital importance to so many millions of people that the safety of its navigation requires exceptional consideration. In order to secure to the nation the control of all its waters, President Jefferson negotiated the purchase of a vast territory extending from the Gulf of Mexico to the Pacific Ocean. The wisdom of Congress should be invoked to devise some plan by which that great river shall cease to be a terror to those who dwell upon its banks and by which its shipping may safely carry the industrial products of twenty-five millions of people.

And in his eloquent remarks on the Mississippi River commission bill in the House of Representatives, June 21, 1879, he said:

I believe that one of the grandest of our material national interests—one that is national in the largest material sense of that word—is the Mississippi River and its navigable tributaries. It is the most gigantic single natural feature of our continent, far transcending the glory of the ancient Nile, or of any other river on the earth. The statesmanship of America must grapple the problem of this mighty stream. It is too vast for any State to handle; too much for any authority less than that of the nation itself to manage. And I believe the time will come when the liberal-minded statesmanship of this country will devise a wise and comprehensive system that will harness the powers of this great river to the material interests of America, so that not only all the people who live on its banks and the banks of its confluent, but all the citizens of the Republic, whether dwellers in the central valley or on the slope of either ocean, will recognize the importance of preserving and perfecting this great natural and material bond of national union between the North and

the South—a bond to be so strengthened by commerce and intercourse that it can never be severed.

Years before, in his speech at Memphis in 1845, Mr. Calhoun, the leader of the school of strict constructionists, said :

The invention of Fulton has in reality for all practical purposes converted the Mississippi with all its tributaries into an inland sea. Regarding it as such, I am prepared to place it on the same footing with the Gulf and Atlantic coasts, the Chesapeake and Delaware Bays and the lakes, in reference to the superintendence of the General Government over its navigation. It is manifest that it is far beyond the power of individuals or of separate States to supervise it.

In discussing a bill making an appropriation for the repair of levees on the Mississippi River, in the United States Senate in 1866, Mr. Thomas A. Hendricks, of Indiana, said :

I was not discussing the question whether Congress can fence farms. That is not exactly the question. The question is whether Congress can aid to reclaim a country which the Government bought in 1803, without the express letter of the Constitution authorizing it. This is to reclaim a whole section of the country and to restrain the Mississippi River within its natural limits. That river is under the control of the Government for almost every purpose. It is a great channel of commerce; it is the nation's river; it does not belong to Louisiana; it does not belong to Mississippi; it is the river of all the States; and when it has broken beyond its bounds, why may we not restrain it by some little aid which the Government of the United States may give to the people along the border?

But I was saying, when the Senator interrupted me, that there is no portion of the country more interested in this particular measure than the region of country that he and I represent. Let us have again that country restored to a condition of productiveness, that our people, the men of Indiana and of Illinois, may find there the market that they did before these dreadful crevasses destroyed that country.

In the same debate Mr. Howard, of Michigan, said :

It is a great channel of commerce. Have we not a right to protect it as such? Have we not a right to dredge it out for the purpose of facilitating trade and navigation upon its bosom? I think no gentleman will deny it; and if we have a right to dredge it, have we not, upon the same principle, a right to establish embankments upon it for the purpose of keeping the waters within their proper channels? These levees, I understand, were erected there mainly for that purpose originally.

I vote for this as a great national improvement. It may incidentally inure to the benefit of proprietors upon the banks of the river. If it does, I should be entirely content with it. But the great object is to afford facilities for commerce and navigation upon that stream, an object in which not only the States mentioned in the amendment are particularly interested, but in which Illinois, Ohio, Wisconsin, Iowa, Michigan, all the States of the Union, have an interest as part and parcel of this great nation; and I will not limit or confine my views to the small benefit which it may possibly confer upon the few persons who are immediately interested as planters and owners of farms upon this great river. I vote for it as a national object, as a national undertaking worthy of Congress, and I hope to see the amendment passed.

As I said, this is not a new question. The action of Congress in the passage of the bill creating the Mississippi River commission was not its first legislation in favor of building levees in order to prevent inundations of the Mississippi River.

In the general appropriation act of September 30, 1850, the Government directed the application of \$50,000 to "a topographical and hydrographical survey of the delta of the Mississippi, with such investigations as may lead to determine the most practicable plan for securing it from inundation," &c. Fifty thousand dollars additional were applied under the law of August 31, 1852, for a continuance of that survey of "the Mississippi bottom and such investigations as may lead to determine the most practicable plan for securing it from inundation."

Private enterprise in Louisiana had brought into market swamp lands held by the Federal Government to the extent of two millions of acres. In consideration of this gain to the Treasury, the act of March 2, 1849, granted the remaining swamp lands in Louisiana to that State for the uses of her levees. On similar grounds Congress extended the provisions of that law in the act of September 28, 1850, to Ar-

kansas and all other States having lands of that character belonging to the Federal Government.

It was largely with the proceeds of these lands that the States of Arkansas, Mississippi, and Louisiana constructed the very excellent system of levees which they maintained before the war, and the enhanced value of the lands reclaimed within those levees afforded basis for taxation sufficient to keep them in repair. The surveys authorized by the appropriations made in 1850 and 1852 were continued until the war, and a report was made upon them in August, 1861, by General Humphreys and Colonel Abbott.

In 1865 Mr. Stanton, then Secretary of War, directed General Humphreys to make an examination and survey of the Mississippi levees and report where and what repairs were most urgently required to prevent great injury to the agricultural interests of the alluvial region of the Mississippi. This Mr. Stanton did with a view of repairing the ravages of war and restoring the levees which had been destroyed as a military necessity. Since repeated reports of a favorable character have been made by committees of Congress on bills favoring appropriations for building levees as a part of a scheme for general river improvement, and these bills generally failed for want of concert of action, proper information, and a recognized and official plan of improvement. In order to secure such a plan the act creating the Mississippi River commission was passed with singular unanimity. Distinguished engineers were appointed upon that commission, and after elaborate examination and surveys they have made two reports to Congress—a preliminary report in 1880, and one fuller and more comprehensive in November, 1881.

In the latter report the commission say:

"The utility of levees as a means 'to prevent destructive floods,' which is one of the ends enumerated in the act creating the commission, is too obvious to require comment. The importance to be attached to that object is a matter wholly within the discretion of Congress, and not suitable to be discussed here.

"The utility of levees as a means to 'deepen the channel' of the river and 'improve and give safety and ease to the navigation thereof,' which are other ends enumerated in the act, is a subject on which differences of opinion exist, and in respect to which the facts collected do not carry equal weight as evidence to the minds of all the members of the commission. It is considered by all that levees, by confining the flood waters of the river within a comparatively restricted space, do tend, in some degree, to increase the scouring and deepening power of the current. But the extent and potency of their influence in the improvement of the low-water channel, in respect to which, for the purpose of navigation merely, improvement is most needed, and their value, for that purpose, as compared with other methods of improvement, and as compared with their cost, are regarded as subjects requiring further observation and study, and the accumulation of further and more comprehensive data, before final conclusions can be reached concerning them. In the mean time, and in the existing state of knowledge on the subject, the present judgment of the commission cannot be better expressed than in the words of their report of February 17, 1880, from which the following extract is submitted:

"Levees have never been erected upon the banks of the Mississippi River except for the special purpose of protecting the alluvial lands from overflow. They have, therefore, always had reference to the high-water stage, and the degree to which levees might prudently be relied upon 'to improve and give safety to navigation,' 'promote and facilitate commerce, trade, and the postal service,' has not hitherto entered into the question of the construction and maintenance of a levee system.

"There is no doubt that the levees exert a direct action in deepening the channel and enlarging the bed of the river during those periods of 'rise' or 'flood,' when by preventing the dispersion of the flood waters over the adjacent low lands, either over the river banks or through bayous or other openings, they actually cause the water to rise to a higher level within the river-bed than it would attain if not thus restrained.

"It would seem to follow, from the law that the volume of water flowing in the bed determines the size, that, prior to the construction of levees, the area of the mean cross-section of bed of the Mississippi River must have been less than it was after the levees had reached their most efficient condition, assuming, what is be-

lieved to be true, that the average rainfall in the Mississippi Valley has not materially changed within the last hundred years.

"There is some evidence, in a comparison of the results of Young, Poussin, and Tuttle's examination of 1821 with later surveys, that the width of the river has increased since that date.

"As silt-bearing streams in alluvial districts have a tendency to assume in the straight reaches cross-sections which are arcs of circles, and in the bends curves of deeper forms, it follows that any general widening of the river resulting from concentration or increase of volume which may have taken place would, as a rule, be accompanied by a general and corresponding deepening as the result of such general enlargement, although local shoalings, temporarily injurious to navigation, might occur.

"There is reason to believe that during the period when levees were in their most perfect condition, from 1850 to 1858, the channel of the river was better generally for purposes of navigation than it has been since that time.

"It is known that during the last twenty years the levee system has been continuously interrupted by a great number of crevasses between Cairo and Red River.

"Before the levees were built a large portion of the flood-waters spread out over the banks of the river in a thin sheet, of which the average depth at the margin of the stream, where it escaped, did not probably exceed a few inches, or, at most, a foot. The immediate effect of the levees would be to increase the volume and height, and accelerate the velocity of the flood-waters between them, resulting in an erosion and deepening of the river-bed, and ultimately in a corresponding lowering of the flood-slope, in accordance with the general law already quoted—that an increase in the normal volume of discharge in a sedimentary stream, flowing through alluvial deposits, results ultimately in a lowering of the flood-surface. It would seem, therefore, that a closure of the crevasses might be expected to accelerate the removal of those shoals which have been produced by them, and if their closure be accompanied by the requisite contraction of the channel to a more nearly uniform high-water width, a lowering of the flood-level may be expected to such extent as will ultimately render the maintenance of the levees as an aid to navigation practically needless above Red River, and greatly lessen the necessity of their permanent maintenance for that purpose below Red River, even at a reduced height.

"While it is not claimed that levees in themselves are necessary as a means of securing ultimately a deep channel for navigation, it is believed that the repair and maintenance of the extensive lines already existing will hasten the work of channel improvement through the increased scour and depth of river-bed which they would produce during the high-river stages. They are regarded as a desirable, though not a necessary, adjunct in the general system of improvement submitted.

"It is obvious that levees are, upon a large portion of the river, essential to prevent destruction to life and property by overflow. They give safety and ease to navigation and promote and facilitate commerce and trade by establishing banks or landing-places above the reach of floods, upon which produce can be placed while awaiting shipment, and where steamboats and other river craft can land in times of high-water.

"In a restricted sense as auxiliary to a plan of channel improvement only, the construction and maintenance of a levee system is not demanded. But in a larger sense, as embracing not only beneficial effects upon the channel, but as a protection against destructive floods, a levee system is essential, and such system also promotes and facilitates commerce, trade, and the postal service.

"A levee system aids and facilitates the postal service by protecting from injury and destruction by freshets and floods the various common roads and railways upon which that service is conducted to and from the river bank, and generally within that portion of the alluvial region subject to overflow. Moreover, the permanent maintenance below Cairo of a connected levee system—a system of sufficient strength to inspire confidence in its efficiency, or the demonstration by the achieved results of an improved river that overflow need no longer be seriously apprehended—would act as a prompt and powerful stimulant in rapidly developing a largely increased trade and commerce in all the products of agricultural industry indigenous to that region and in those branches of manufacturing enterprises related thereto."

In the report of the sub-committee on outlets and levees upon the degradation of the banks of the river and its effect upon navigation, will be found many strong arguments in favor of the levee system, and also the theory, supported by an irresistible array of facts, "that the elevation of the banks of the river before the lands adjacent to the main stream, and in the basins of its tributary streams, were

cleared and cultivated, conformed much more nearly to the flood plane of the river than they do at present, and they are now so degraded by causes to be cited hereafter that the building of levees originally undertaken for reclamation has now become a question of maintaining artificially the former height of banks to preserve navigation ;" and this decay of the banks is shown to be the natural result of the deforesting and cultivation of the country, and the sub-committee continue—

"The time has passed when we can deal with the causes of change and deterioration heretofore cited. We cannot arrest the continued settlement of the basins and of the immediate banks of the stream, nor the attendant processes of clearing, draining, reclaiming. In any plan of improvement it must be recognized that the banks of the river have been lowered from their normal height several feet by causes that will increase for many years; that this former elevation of bank is restored, and the dispersion of flood-waters restrained by artificial embankments; that these are in precarious condition, requiring constant repair, and an extension, of more or less importance, in the plan recommended in our previous reports.

Therefore, apart from this extension, which has been partially discussed in previous reports of the commission as a work that would be of auxiliary importance, does not the question of levees, in view of the foregoing discussion, assume greater importance than has been allowed heretofore ?

Would not the navigation of the river be most seriously obstructed if the normal banks were lowered seven or eight feet, as they now would be by the obliteration of levees, so as to allow the dispersion of flood-waters at a stage that much lower than the height which the river established, in compliance with the laws of its regimen ?

Do not the present levees, instead of being only supplementary works built on top of the banks, stand as a part of the normal bed, giving that height of bank, and maintaining that restraint upon the flood-waters which were established as conditions of its regimen ? (See page 125, Report Mississippi Commission.)

The commission of engineers appointed under the act of June 22 1874, "to investigate and report a permanent plan for the reclamation of the alluvial basin of the Mississippi River subject to inundation," in their report, after describing the incomplete levee system after the war, say :

In fine, then, the experience of over one hundred and fifty years has utterly failed to create judicious laws or effective organization in the several States themselves, and no systematic co-operation has ever been attempted between them. The latter is no less important than the former, for the river has no respect for State boundaries, and deluges Arkansas through breaks in the levees of Missouri, and overflows Louisiana by floods passing across the Arkansas line.

It is a common and apt figure of speech to personify the Mississippi, and to speak of the conflict waged to protect the country against the inroads of a terrible enemy, and yet the army of defense has always been content to remain a simple aggregation of independent companies, with here and there a battalion under the command of a board of officers. That victory has not more frequently perched upon their banners is surely not surprising.

The British administration of the Indian lines is in striking contrast. The government takes the initiative, and sends its engineers to survey and estimate for levees at such localities as promises to be remunerative. The reports with detailed maps, plans, and estimates of costs are sent to the collector, who publishes the same and calls for reasons why the improvement shall not be ordered. Unless good reason is shown by the owners of the land to be benefited, the levees are built by the Government and a tax sufficient to pay for the same is laid upon the lands reclaimed thereby. If the sum is large an annual tax for a term of years is collected; if small, immediate payment is required. The enhancement of the value of his land thus precedes any raising of money by the proprietor.

This system is not suggested for adoption on the Mississippi, but is mentioned simply as an illustration that other nations have found by experience that individual efforts cannot successfully combat nature on a grand scale.

In the report of Humphreys and Abbott, made to the Secretary of War in 1861, (to which I have already alluded,) it is stated :

As the result of the careful investigation the subject had received, that the only method of protection against inundation that could be resorted to with success was the levee system, but that the levees as then constructed were not high enough

by several feet. The additional heights that should be given at different points in the course of the river are there pointed out.

It is further stated that if there were no levees whatever, the cost of constructing them of such height and dimensions as would give complete protection against inundation to the whole alluvial region would amount to about twenty-six million dollars.

That to bring the levees then standing to this perfection, supposing them to be properly located, would cost \$17,000,000.

The area thus protected amounts to 31,700 square miles, of which a mere narrow strip along the banks of the river and along a few bayous has been opened for cultivation.

Of this area, 12,300 square miles is below Red River, and belongs to the sugar region. Under a proper system of protection and drainage one-third of it may be eventually opened and cultivated, or 2,500,000 acres.

There are now under cultivation in this region about one million acres.

Of the remaining 19,400 square miles, perhaps 3,000 square miles may be north of the cotton-growing region, leaving some sixteen thousand square miles within that region of the most fertile alluvion, two-thirds of which may be finally rendered cultivable under a proper system of leveeing and draining. This would give 7,000,000 acres of cultivated land, capable of giving a bale of cotton to the acre, or about double the whole cotton crop of the United States in 1860.

The levees constructed under such a system would not, when greatest, exceed in magnitude those on the right branch of the Rhine below Arnheim, which protect the most fertile part of Holland. These levees are exposed at high water to as strong a current as that of the Mississippi in flood, and also to the destructive effects of ice. But the occurrence of crevasses such as take place with every great flood of the Mississippi are there unknown. Should they happen, the ruin of a large part of the most productive portion of Holland would follow, as extensive tracts protected by the levees are lower than surface of the sea, and their reclamation from overflow could only be effected by a drainage similar to that which has been applied to the lake of Harlem. The supervision, watching, and repair of the levees is costly, but effective and remunerative. The levees of the Mississippi as now existing are trifling compared to the interests they protect, and to the levees of the delta rivers of Europe, the Po, the Rhine, and the Vistula.

Some indication of the great wealth that would flow from the establishment of a proper levee system is given in what proceeds: such a system will probably be introduced gradually, and, as experience proves to those who must pay for it, that it is more and more necessary.

There have been great changes since the war; much of the country under cultivation and protected by levees at the time this report was made has been abandoned. The lands have depreciated in value because of insufficient protection and periodical overflows, and to some extent from scarcity of labor.

Little or no new land has been opened to cultivation, swamps remain undrained and forests uncut, and thousands of acres of land more fertile than the delta of the Nile are not able to bear the burden of taxation. The States, the counties, and parishes are impoverished and crippled with *ante-bellum* debts or with new ones created in a futile attempt to establish a levee system. Thrice in fifteen years have the waters deluged our lands, each time sweeping away all that has been accumulated by the intervening years of labor and thrift, and leaving nothing but the naked lands, enriched perhaps with a deposit which might be valuable to some more arid soil, but which is of little value when added to a bed of inexhaustible alluvion. The planters of the Mississippi Valley are men of elastic temperament and the most untiring energy. Again and again they have arisen superior to adversity, and have battled nobly to rebuild their fortunes and to protect their lands against new inundations.

But, Mr. President, the unequal war must cease. No individual efforts, whether of planter, county, district, or State, will longer avail. Either the Federal Government must take charge of this gigantic work, so truly national in its character, or this vast alluvial country must be relegated to the wilderness from which it was redeemed.

We have unfortunately no estimates from the Mississippi River commission of the cost of a complete levee system.

In the brief remarks which I made upon this subject on the 15th of March I read an estimate made by a member of the commission, Major Harrod, which I will not read now, but will print with my remarks.

NEW ORLEANS, December 2, 1881.

DEAR SIR: In reply to your request for information relative to the cost of a levee system, I give you my personal views. They cannot strictly be called an estimate, as such can only be based on surveys, and those of the Mississippi River commission are not yet sufficiently advanced to afford all the data necessary. I give you, however, the facts on which I base my opinion, and from which I think you will perceive that the figures are ample.

The levee commission of 1874 estimated that the aggregate length of breaks in the Arkansas and Mississippi fronts was 192 miles, which would require for closing 4,000,000 cubic yards, or 20,833 cubic yards per mile. It is, therefore, certainly more than sufficient to assume that the entire alluvial front of these two States, say from the Louisiana-Arkansas line to Commerce, Missouri, a distance of 600 miles, will require relieving. This distance, at the above rate in cubic yards, amounts to 12,499,800 yards.

The Mississippi State levees have been put and maintained in good order since 1874. The same is partially true of Louisiana. An allowance of 2,500,000 yards would certainly be sufficient, apart from maintenance, to close existing breaks in these two States. This, added to the requirements in Missouri and Arkansas, would be 15,000,000 cubic yards.

But it is probable that the entire line, thus repaired, might need raising. The Mississippi River commission, as you will see in the last report, probably now before the Senate, does not consider the bed of the river practically inerosible, as has been heretofore assumed. Its reasons are derived from more extended and exact information than has been available. It is not certain that any great elevation of grade will be necessary for a continuously completed line. I am very sure that the additional elevation heretofore recommended, amounting as a maximum, to eleven feet, will never be required. For purposes of estimate I will assume that the present levees range in height from four to twelve feet, and that this must be increased to from five to fifteen feet over the entire length, on both banks, say 1,670 miles. While there are now heights exceeding twelve feet, there are also many localities where no levees, or levees less than four feet high, are required.

The amount of earthwork required for this additional grade is about 44,000,000 cubic yards, giving the following total:

Entire new levees in Arkansas and Missouri.....	12,500,000
Breaks in Louisiana and Mississippi.....	2,500,000
Raising grade throughout.....	44,000,000
Total cubic yards.....	59,000,000

The State of Louisiana has built her levees for the past two years at an average price of 19.4 cents per cubic yard. For the two years previous to that period, when supplies and labor were cheaper, the average cost was a fraction over 17 cents. They payments for this work have not been in cash, some warrants usually running as much as a year before settlement. The work also was divided into such small parts that contractors were not justified in purchasing the labor-saving machinery necessary for the economical execution of such work. It seems to me entirely certain that levee building could be done for 20 cents per yard for cash and in such large contracts as would admit the purchase of a suitable outfit. Assuming this rate, and the quantities before stated would make the cost of a complete levee system \$11,800,000, or about one-quarter of previous estimates, namely, \$46,000,000.

Now concerning maintenance. The States of Louisiana and Mississippi have about 1,070 out of 1,670 miles of front requiring levees, or where the hills do not approach the river. This is kept in tolerably good order. There is spent annually for maintenance in these two States a sum not exceeding \$400,000; \$500,000 would suffice to do it well. Prorating this sum over the entire length would give \$773,000. I believe that with the better locations and dimensions that would be given by the Government to a systematic line, and with the protection to caving banks by revetment and other works of channel improvement, and with the greater security resulting from increased height, the maintenance could be accomplished annually for the sum of \$600,000.

The part that this levee work would play in securing the objects enumerated in the act creating the Mississippi River commission is declared in our reports.

With the other vast advantages that would flow from it you are as familiar as I am.

Very respectfully.

R. M. HARROD.

Hon. B. F. JONAS.

Mr. Harrod's estimate is \$11,800,000. It was made before the overflow, and the repairs of the levees now made necessary would add probably \$2,000,000 to the cost.

Fifty millions, Mr. President, would be a cheap expenditure to protect this magnificent country from destruction, and it would be repaid tenfold to the general wealth of the country in the great increase of values, of population, and of valuable agricultural products.

But we are told by Senators who desire to vote appropriations for the improvement of the Mississippi River that they cannot vote for levees to reclaim the alluvial lands upon its banks. This though they have voted for initial surveys and estimates for this very purpose, and although the commission of engineers have reported in favor of levees, not only for that object, but as a mode of contracting and deepening the channel.

Where, Mr. President, are the banks of this river now, and who are the riparian proprietors? In Arkansas the waters spread to the hills, over an area of fifty miles in width. In Mississippi the flood extends over the whole Yazoo Valley, more than a hundred miles from the Mississippi River. In my State the devastating flood has buried the riparian parishes out of sight, and the waters of the Mississippi are spread over the La Fourche, the Teche, the Atchafalaya, the Courtableau, in short over the whole southern portion of the State, overflowing sections of country in some instances two hundred miles from its ordinary banks and supposed to lie beyond all danger of inundation.

Are these people riparian proprietors who are not to be protected because the value of their lands may be enhanced? Are the valleys of the South to be deserted and their people to be compelled to flee to the hills? Is the money of the nation to be used only to deepen this vast river, so that it may bear the productions of the North and West to the sea, and not a dollar to be used for the purpose of controlling its swollen waters and preventing it from emptying itself in death and desolation over a country equally as fair and more than equally productive? Is one object more national in its character than the other? Will one add more to the general prosperity and happiness of the country than the other?

No, Mr. President, in the language of President Garfield again:

The wisdom of Congress should be invoked to devise some plan by which that great river shall cease to be a terror to those who dwell upon its banks, and by which its shipping may safely carry the industrial products of twenty-five millions of people.

These objects should be common to us all, and should be included in any bill we may pass, as they are included in the plans recommended by the Mississippi River commission.

But it is said, Mr. President, if the commission should deem it best to build levees for the purpose of deepening and improving the channel, that they have the power to do so, and that the alluvial lands would receive incidental benefit therefrom. If so, why not declare it, and why couple the appropriation contained in this bill with a proviso which would seem to limit this power or make it doubtful whether it exists at all? I am told that in view of this proviso, which was attached to the appropriation made last year, the com-

mission entertained doubts as to their power to spend a dollar for levees, even for the purpose of contracting the channel, and I know that the people of the Mississippi Valley read it with the same doubt.

If these people are to have even incidental relief we should tell them so. They are waiting in their desolate homes for a rift in the sullen sky; waiting to be encouraged by a hope that Congress will grant them some aid and security for the future. If the levees are to be rebuilt, if the destructive overflows are to be controlled by efforts of the General Government, then they can once more go to work with hope. Their lands will have some value; they can obtain credit for provisions, farming utensils, and supplies; they can re-employ and feed their laborers, restore their fences, rebuild their cabins, and cultivate their crops. If we are going to give them even this incidental aid let us say so, and inspire them with hope and energy, so that as their lands emerge from the water they may commence the work of restoration.

It is with this view I have offered my amendment.

I am, as I have said, in favor of a direct appropriation for building levees, and shall vote for the amendment of the honorable Senator from Arkansas, [Mr. GARLAND.] Should that fail I will ask the Senate to adopt my amendment, which, meaning what the friends of the "proviso" say that it means, speaks out in language which cannot be misunderstood.

The amendment proposes to strike out the proviso and to insert, so as to read:

And so much thereof may be applied to the immediate repair or construction of such levees as in the judgment of the said Mississippi River commission will assist in deepening the channel and improving the navigation of said rivers: *Provided*, That no part of the sum herein appropriated shall be used in the construction or repair of levees for the sole purpose of preventing injury to lands by overflow, or otherwise than as a means of deepening the channel or improving the navigation of the rivers.

The adoption of this amendment will make the meaning clear both to the commission and to the people most interested.

I do not care to discuss the question of outlets, as they have not been adopted in the plans of the Mississippi River commission, and find little or no favor among engineers or the people of the Mississippi Valley. A respected citizen of my State, Captain Leathers, has been before the committees of Congress advocating the outlet proposition of Captain Cowden, and opposing the plans of the Mississippi River commission. I find, however, that on another occasion, before a committee of Congress, Captain Leathers testified strongly in favor of a levee system as the best means of preserving the banks and deepening the channel of the Mississippi. I quote from his testimony:

I came on the river in 1836. The river was very low that year. The average depth of water on the shoalest bars from the mouth of the Ohio to the mouth of the Arkansas, a distance of about four hundred and fifty miles, was about four feet. From mouth of Arkansas to mouth of Yazoo, about two hundred and twenty-five miles, there was about five feet. From that to the mouth of Red River, about the same distance, the average depth on the shoaled bars was seven feet. Below Red River levees had been built: I do not know how long; but thence to the Gulf there was deep water.

Then levees began to be built above Red River in the parishes of Concordia, Tensas, Madison, and Carroll, the result of which was that in 1857, a period of twenty-one years, while the river was twenty inches lower in its banks, there was not less than eight and a half feet of water on the shoalest bars in the formerly un-leveed district between the Red and Arkansas Rivers, showing an increased depth of four feet scoured out by the current created by concentration of the water.

I am convinced from my observations that if the levees were rebuilt and kept up on the lowlands, the concentration of volume and consequent accelerated current would soon wash out a channel large and deep enough for any purposes of commercial navigation. I am thoroughly satisfied that in the last ten years the

frequent breaks in the levees and crevasses, dispersing the water over the country and diminishing the current, have caused the river to begin to shoal again. It always shoals near these breaks, evidently in consequence of the slackened current and natural deposit of sediment on the bottom which follows.

I am confident that the only way of deepening the channel and getting reliable navigation is to concentrate the current, and if the great river accommodates itself by scouring out the bottom there will be no necessity for higher barriers at the top, and the levees will become more solid and reliable, because relieved in a measure from the great pressure to which they are subjected.

In the discussion of this bill, Mr. President, some opposition, or at least criticism, has come from the Senator from Minnesota [Mr. McMILLAN] and the Senator from Wisconsin, [Mr. CAMERON,] principally on the ground that the present appropriation is asked by the commission for the river below the mouth of the Ohio. The river commission have only made a "progress report," as authorized by the fifth section of the act under which they were appointed, which says:

They may, prior to the completion of all the surveys and examinations contemplated by this act, prepare and submit to the Secretary of War plans, specifications, and estimates of costs for such immediate works as in the judgment of said commission may constitute a part of the general system of works herein contemplated to be by him transmitted to Congress.

It is usual to commence the work of river improvement from the mouth and work upwards, and certainly the most immediate necessity exists between the mouth and the Ohio River. If the policy of contraction is to be adopted, and the work should commence at the headwaters, what would become of the concentrated volume of water when it reached the lowlands, where no work had been done? Manifestly it would spread over the whole country, producing a flood in high-water season and a wide, shallow stream, full of sand-bars, in the season of low water.

It appears from the report that the surveys and levels have been completed to Keokuk, Iowa, and that observation parties have been at work at Prescott, Winona, Clayton, and other points on the Upper Mississippi during the past year.

I feel, Mr. President, the same interest in the improvement of the Upper Mississippi as in the Lower, and I am prepared to vote for all appropriations for that purpose as soon as the commission submit their plans and estimates.

Mr. HARRISON. Will the Senator from Louisiana pardon an interruption for one moment?

Mr. JONAS. Certainly.

Mr. HARRISON. I ask the Senator whether it is not true that the work of improvement on the upper river is going on and has been going on simultaneously with the work of the commission on the lower river, under engineer officers placed specially in charge of sections of the upper river? I understand that it is not intended at all that the appropriation provided for in this bill shall apply to the whole river, or be the only appropriation for the river. It is the purpose of the commission, if I understand it, to leave those works on the upper river and even between Saint Louis and Cairo in charge of those engineer officers who have had them in charge, and that by special appropriations works on the upper river shall be made in addition to the amount provided for in the bill.

Mr. JONAS. I am glad to hear the explanation of the Senator, because I favor every one of these appropriations, and shall vote cheerfully for them when they come before the Senate. My impression was the other day that these appropriations were perhaps provided for in the river and harbor bill which is now being formed in the House, of which of course we have no information and to which we have perhaps no right to allude.

I live on the same great river as the Senator from Minnesota, although more than eighteen hundred miles of water-way separate our homes. My people are as much interested in its navigation and improvement from the source to the mouth as his.

We desire that the products of his great State shall find cheap and easy transportation to market, foreign or domestic, on the bosom of the Mississippi, and through our gates. We are natural commercial allies and friends, and it is to our mutual interest that every foot of the mighty stream which stretches its great length between us should be made available for the uses of commerce by the expenditure of whatever of talent, energy, or money may be necessary. I stand ready to vote with the Senator for all appropriations that may be required in order to perfect the low water-navigation of this river so that there may be a permanent channel maintained from the head of the river to the jetties, at all times and seasons, when not impeded by ice, and to this end I desire and ask him and other Senators interested in such improvement to stand by and support the recommendations of the Mississippi River commission.

The friends of this bill are attacking no other appropriation for any other locality or national purpose. We are criticising no other appropriations either now proposed or hitherto made for the development of our great national water-ways, harbors, and lakes. We claim that the friends of all these measures are interested in the improvement of the Mississippi, and in the great commercial results and interchange of commercial relations which must follow.

I shall not take time, Mr. President, in dilating upon the products and commerce of the Mississippi Valley, all of which should and will be tributary to the Mississippi River if permanent low-water navigation is secured. It has been hitherto stated on this floor—

That fourteen States, which lie wholly within the valley, contrasted with the entire Union, produced, in 1879, 81 per cent. of the corn, 64 per cent. of the wheat, 60 per cent. of the oats, 49 per cent. of the cotton, 55 per cent. of the tobacco, and contained 66 per cent. in value of the live hogs.

That the whole nineteen States intersected by the navigable portions produced, in 1879, 90 per cent. of the corn, 73 per cent. of the wheat, 83 per cent. of the oats, 64 per cent. of the tobacco, 77 per cent. of the cotton, and contained 81 per cent. in value of the live hogs.

That the value of the annual internal commerce of the valley is about twelve and one-half times that of the total foreign commerce of the United States, and therefore about \$18,000,000,000, or larger than the total foreign commerce of the whole world.

Since the success of the jetties has been assured the movement of grain by river for export from New Orleans increased in the single year ending August 31, 1880, as follows: Corn, 92 per cent. and wheat 186 per cent., and this in spite of low water and dangerous navigation.

The transportation rates on a bushel of wheat shipped from the center of the valley, at Saint Louis, by river to the seaboard at New Orleans, during the three years 1877, 1878, and 1879 ranged all the way from ten to fifteen cents less than by rail to the seaboard at New York.

If half of the grain produced in the fourteen valley States in 1879 had to be shipped from that center by river to New Orleans instead of by rail to New York the annual saving to the seaboard at ten cents per bushel would be \$90,381,552. and at fifteen cents per bushel \$135,572,328.

Mr. Nimmo, the distinguished statistician of the Treasury Department, in his report of this year on the "competition between the Mississippi River and the trunk railroads from Saint Louis to the Atlantic seaboard," gives the following statement of the compara-

tive freight charges as between Saint Louis and Liverpool, via New Orleans and via New York, from January 1, 1880, to July 1, 1881:

Rates from Saint Louis to New Orleans on bulk corn during the year 1880, and from January 1 to July 1, 1881.

Period.	Rate per bushel.
1880.	Cents.
January and February.....	9 to 9½
March.....	8 to 8½
April, May, June and July.....	7 to 7½
August.....	8 to 8½
September, October, November, and December.....	9 to 9½
1881.	
February.....	9
March.....	8
April.....	7
May.....	6
June.....	5

All-rail rates on grain per 100 pounds from Saint Louis to New York during the year 1880, and from January 1 to July 1, 1881.

Period.	Per 100 pounds.	Per bushel of 60 lbs.
	Cents.	Cents.
January to March 8, 1880.....	46½	28
March 8 to April 14, 1880.....	40½	24½
April 14 to November 22, 1880.....	35	21
November 22 to December 31, 1881.....	40½	24½
January 1 to April 18, 1881.....	40½	24½
April 18 to June 20, 1881.....	35	21

Mr. Nimmo continues:

In view of the fact that ocean rates fluctuate from day to day, and that no agreements as to those rates prevail, as in the case of railroad transportation, it is difficult to present a schedule showing the relative rates from New Orleans and from New York, respectively, to Liverpool. It is stated by Mr. George H. Morgan, secretary of the Merchants' Exchange at Saint Louis, that the ocean rates from New Orleans to Liverpool are, on the average, about 25 per cent. greater than the rates from New York to Liverpool. Ocean rates at New Orleans are shown in Appendix No. 42.

Mr. Morgan also states that upon the opening of navigation in the month of March, 1881, and for some time thereafter, the through rate from Saint Louis to Liverpool was as high as 26½ cents per bushel on wheat, while the rate by rail via New York and thence by steamer to Liverpool was about thirty-five cents. He states, however, that since the first rush ended, freights have gradually declined until on the 31st of May the rate from Saint Louis to Liverpool via the Mississippi River was only 18½ cents per bushel on wheat, whereas at the same time by the rail route via Atlantic seaports it was about thirty cents per bushel, a difference of 11½ cents per bushel in favor of the river route.

Mr. John King, jr., late first vice-president of the Baltimore and Ohio Railroad Company, in his report to the joint executive committee of east-and-west trunk lines, under date of April 27, 1881, states that on the 20th of March last the total charges for transporting grain from Saint Louis to Liverpool via New Orleans, including river rates, ocean rates, insurance and transfer charges at New Orleans, amounted to 46.74 cents per 100 pounds, or 28 cents per bushel, and that at the

same time the total charges for transporting grain from Saint Louis to Liverpool via New York, including rail and ocean rates and all incidental charges, amounted to 60.44 cents per 100 pounds, or 36½ cents per bushel. This shows the charges on the route via New Orleans to be less than the rates via Atlantic seaports by 8½ cents per bushel.

At the time this statement was made by Mr. King the river rate was eight and a half cents per bushel from Saint Louis to New Orleans. It is believed, however, by well-informed persons that grain can thus be transported in barges at a profit for four cents per bushel.

These statements show the great advantages offered by the river route for western transportation to the seaboard, even with the present difficult navigation. It is easy to see how much greater would be its capacity and how much less would be the cost of transportation with permanent low-water navigation. It is even now a matter of almost common occurrence for a single tug to tow from Saint Louis to New Orleans, in barges, a cargo of three hundred and seventy-five thousand bushels of grain and accomplish the trip in ten days. To carry this cargo by rail would require over nine hundred freight-cars and test the capacity of railroads to carry it in double the time.

Such being the great national advantages of this river improvement so successfully inaugurated by the construction of the jetties, and in view of the demand made from nearly all sections of the country for its continuance and perfection by Congress under the plans of the Mississippi River commission, I sincerely trust that this bill may receive the approval of the Senate and that the amendments offered may also be adopted.

The honorable Senator from Indiana, [Mr. HARRISON,] in his speech yesterday, while advocating channel improvements for the river, devoted most of his time to an attempt to show that the levee system has no relation to the work of river improvement, and opposed with great earnestness any proposition to expend a dollar for the purpose of preventing destructive floods, or, as he styles it, "land reclamation."

The honorable Senator might have approached the discussion with less bitterness and indulged, with good taste, in less misrepresentation of the arguments of his opponents.

This is no place for bitterness or partisanship, and I am at a loss to see any occasion for such frequent allusions to the rebellion. The losses and poverty of which the people of the Mississippi Valley complain are not the results of war, but of constant inundation, which sweep away the proceeds of their crops, leaving them always in debt, and always, like Sisyphus, recommencing their weary task, except that, unlike that unfortunate, they have no hill up which to roll their burden. They have State governments, but their treasuries are impoverished, and these State governments are unable to make treaties with each other for the adoption of a general levee system.

I see no reason why the honorable Senator should have said that the "War Department, which once sent armies and gunboats to destroy and kill, became the quick and gracious agent of Congress to convey food and shelter to the hungry and homeless." Why should the recollections of the war be evoked and connected with the generous action of Congress? Does not the honorable Senator know that nine-tenths of those whom we have fed and sheltered with this benefaction are colored people who had no part in the war except to receive the benefit of freedom. We have fed and clothed these people since the war, and have bought their food in Indiana, Illinois,

and Ohio. Their wages and employment have continued whether crops were good or bad, and as long as bread and meat were in the storehouse it has been divided among them.

It has been twenty years since the war, Mr. President. The War Department has become one of peace. Let it perform the errand of mercy with which it has been charged by Congress without the display of ancient banners or the thunder of ghostly artillery. In the few remarks which I made when the bill of Senator GARLAND was first introduced, in drawing a distinction between the condition of the planters in the Mississippi Valley before the war and since, I stated that before the war 300,000 slaves, representing a taxable value of nearly \$300,000,000, were held and assessed as property.

On this statement it has pleased the honorable Senator to make the following sneering comment, coupled with an innuendo unworthy of this place and of his position. He says:

Plainly stated, it is that the planters are now unable to pay the necessary taxes because they have lost slave property of the value of \$300,000,000, and therefore the United States ought to build the levees. A middle premise in the argument, not stated by the Senator, suggests itself to me as necessary to its completeness. It is this: The United States destroyed this slave property, therefore, &c.

I treat the innuendo with the contempt which it deserves.

The amendments offered to the pending bill, Mr. President, ask for no appropriation except to carry out the plans of the commission. I contend that levees are an important part of their plan of improvement, and on that question take issue with the Senator.

The honorable Senator says that the river commission have not recommended the building or repair of levees as a part of their plan for river improvement. He admits that they have adopted their former report, made in 1880, upon that subject as their present judgment, and he read a portion of that report, but did not read it all, as I have done. He must have changed his opinion as to the meaning of the river commission in the report referred to, for he joined with General Comstock in a minority report, in which he dissented from the opinion of the majority of the committee on three points.

The second ground of dissent was as follows:

2. We do not concur with the majority of the commission in their estimate of the value of the closure of gaps in existing levees as a factor in the improvement of low-water navigation; this estimate being derived in part from the theoretical views already referred to.

Existing evidence seems to show that during low-water stages the bars below Cairo are usually cut out by the river, and that when the period of low river in the following season approaches, these low-water channels are found filled up, the low-water bed of the river in these shoal places having risen, to be again cut out by the low river. (See Major Suter's report in Report of Chief of Engineers, 1875.)

At the Horse Tail Bar, below Saint Louis, the bed of the river has been observed to rise eight or ten feet above low-water in the interval between two low-river periods. (See General Simpson's report in Chief of Engineer's report, 1876.)

If, then, the final effect of a flood which rises from thirty to fifty feet above low-water is to raise the low-water bed of the river at shoal places, may it not be possible that if the height of this flood be somewhat increased by levees the bed may rise still further instead of being depressed, thus injuring instead of improving navigation?

But even if a rise or fall of a foot or two in the bed of the river were produced by levees, it is difficult to see how this would sensibly affect the low-water width of the river. Bad navigation arises from excessive low-water width at certain places, and is to be cured by contracting that low-water width to about three thousand feet. This contraction must be effected by works in the bed of the river, and not by levees on top of its banks, out of contact with the low-water river.

For these reasons we are of the opinion that levees are of very little value in improving the low-water navigation of the river. Of their necessity in protecting alluvial lands against destructive floods there can be no doubt, and to obtain such protection the first step would be the closure of gaps in existing levees. The reg-

ulation of the low-water river, including the fixation of the river banks, would be of the greatest aid to the levees, since it would secure them from destruction by caving.

If the majority of the commission at that time "favored the closure of gaps in existing levees as a factor in the improvement of low-water navigation," they are of the same opinion now, for they reiterate that report as their present judgment, and they have been strengthened by new recruits, for the report is signed by General Comstock, who dissented last year, and by Mr. Taylor, the successor of the honorable Senator.

How can the honorable Senator assert with so much confidence that the commission do not include the use of levees in their recommendations and plans, when their original estimate of this year (in which all concur) calls for the sum of \$1,010,000 for closing existing gaps in levees, and when they have made a supplemental report, forwarded to the Senate with the special recommendation of the President, asking for \$1,010,000 more for the same purpose, rendered necessary by the overflow.

Certainly the honorable Senator does not expect to convince the Senate that the Mississippi River Commission does not include the levee system in their plan of improvement, when they ask an appropriation of over \$2,000,000 for the purpose of building levees.

Captain Eads is a distinguished member of the Mississippi River commission, and his very able statement, (the honorable Senator objects to its being called a report,) which was published in the speech of my colleague, certainly shows the great advantage of the levee system to the work of channel improvement and may have some influence in the country, even when opposed to the results of the great experience of the honorable Senator.

Major Harrod, of Louisiana, is a member of the river commission and is an accomplished and experienced engineer. I find in the New Orleans Picayune of the 10th the following answers of Major Harrod to a reporter of that paper, showing that he believes that levees are essential to the improvement of the navigation of the river:

Question. Do you regard levees as absolutely necessary for the purpose of carrying out the plans of the commission to improve navigation?

Major H. I think levees are essential to the improvement and even the maintenance of the navigation of the river. The data derived from the observations of the commission have strengthened the opinion I originally held on this subject and I think the results obtained this year will satisfy every one of the absolute necessity for levees to carry out the objects of the bill organizing the commission.

Question. In case that a million, or say two millions, are available for levee purposes this year, at what points will the work of constructing levees begin?

Major H. This question must be decided by the commission. As for my individual views, I suppose it would be good policy to close recent gaps, so as to maintain the present condition of affairs. Afterward the older gaps could be closed, but under any circumstances it will be essential for the riparian States to maintain their levee organizations. The prompt action of Mississippi in this regard is very commendable. The closing of gaps will be effected by levees, all of a higher grade than those previously standing. It will be necessary for the States to raise the grades of levees remaining to the height that this flood shows is required to restrain the water.

In short, Mr. President, I am informed that such is the testimony of all of the members of the commission, as given recently before a committee of Congress, whose testimony is unfortunately not yet printed. Major Suter signed, with Major Harrod, the report of the sub-committee on levees and outlets, to which I have previously referred.

The honorable Senator lays much stress upon the language used by the commission, that levees "are regarded as a desirable, though

not a necessary adjunct in the general system of improvement submitted," and he seemed to derive much comfort from its frequent repetition. If they are a "desirable" adjunct, why should they not be built, even if not absolutely necessary? Why should the commission be restrained from using this desirable mode of improvement, which certainly must be superior to the bare requirements of necessity?

The honorable Senator furnished an answer. It pervaded his speech. Because the levees thus built may afford incidental protection to the alluvial lands; because they may save a fertile and cultivated country from inundation and destruction. These are sufficient reasons with the honorable Senator why the "desirable" adjunct should give way to bare necessity.

I trust reasons of such a narrow character may not prevail with the Senate.

Benjamin F. Jonas
Benjamin F. Jonas

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